Terrific New Potatoes for Growers and Gardeners

SCOTT BAUER (K9152-1)

The potato is the vegetable of choice in the United States. On average, Americans devour about 142 pounds of it per year. New potato releases by ARS scientists and university co-researchers give us even more choices of potatoes to eat.

Backyard gardeners who want something new and different for their vegetable beds this year might try an attractive and appetizing red-skinned potato called IdaRose. This tasty new tuber, released by a team of Agricultural Research Service and university scientists, is perfect for steaming or boiling. It makes a colorful addition to chilled potato salads in summer or a satisfying accompaniment to heartier, wintertime fare such as soups or stews.

What's more, the plump IdaRose tubers store exceptionally well in a cool, dark, and dry corner of a basement, root cellar, or low cupboard. "That's unlike some kinds of potatoes that tend to sprout soon after you put them in storage," says Dennis L. Corsini, a plant pathologist in the ARS Small Grains and Potato Germplasm Research Unit at Aberdeen, Idaho.

Corsini and Joseph J. Pavek, now retired from Aberdeen, first eyed IdaRose in 1984. At ARS and University of Idaho research plots, about a half mile down the road from their offices, IdaRose was growing among thousands of other experimental potatoes.

Their first impressions of this red beauty led to a decade of rigorous testing by growers and university specialists. In the tuber trials, IdaRose—known then only as pedigree number A82705-1R—produced just as many top-grade potatoes as Red La Soda, the most widely grown red-skinned potato in the western United States. Another plus: IdaRose had a lower incidence of unsightly defects, like hollow heart and internal necrosis, than Red La Soda.

SCOTT BAUER (K9146-1)

In a potato cellar, geneticist Richard Novy (right) and plant pathologist Dennis Corsini examine quality of tubers from the Aberdeen breeding program after cold storage.

Secret of Its Appealing Texture

The experimental potato also consistently had the correct balance of starch and water. "In a red potato," explains Corsini, "you want a lower starch content, so the potato holds together well when you steam or boil it."

Today, about a dozen farmers produce IdaRose seed potatoes. Most are sold to commercial growers to produce the following year's crop of IdaRose tubers for sale in supermarkets.

But some of the seed tubers are bought up for selling to home gardeners. "Nearly all leading retail nurseries in Idaho's larger cities," says Corsini, "have stocked IdaRose for backyard gardeners. Apparently, homeowners have heard about it by word of mouth, and want to try it."

IdaRose is one of four new potato varieties that the Aberdeen scientists—in collaboration with researchers at state agricultural experiment stations in California, Oregon, Washington, and Idaho—have released to growers within the past few years.

Their work for western farmers is of nationwide importance because those growers produce more than half of America's potato harvest.

The potato is this country's favorite vegetable. On average, Americans eat about 142 pounds every year—either baked or processed into fries, chips, or other familiar convenience foods. Potatoes provide vitamins A, B_1, and C, as well as calcium and protein.

SCOTT BAUER (K9151-1)

Breeding potatoes involves choosing parents that complement each other in their strengths and weaknesses. In crossing two clones, geneticist Richard Novy pollinates a potato flower with pollen from another parent.

Remarkable Russets Released to Growers

Besides IdaRose, the scientists have developed two new, top-quality russet potatoes—Gem Russet and Bannock Russet.

Both varieties have all the characteristics typical of a russet—the most widely used potato in America. Those familiar features include an oblong shape, finely netted brown skin, and white flesh. Too, the new spuds are suitable for fresh-market sale or for processing into golden fries, says Aberdeen plant geneticist Richard G. Novy.

Tuber trials at test plots in three western states demonstrated that Gem Russet's yields of U.S. No. 1 tubers (the top commercial grade) were comparable to those of Russet Burbank, America's best-known and most widely planted russet variety.

Newcomer Bannock Russet did even better, boasting U.S. No. 1 yields that were 32 percent higher than Russet Burbank. And Bannock Russet required about 40 percent less nitrogen fertilizer than Russet Burbank to produce equivalent yields.

"That saves money for producers," Novy says, "and reduces the amount of unused nitrogen that could potentially leach into the groundwater. Also, compared to many other commercial russets, Bannock Russet was more resistant to a wider array of diseases that plague potatoes."

But why offer growers a choice of two new russets, instead of just one? Novy explains, "A given region may have many different growing environments. A russet cultivar that does well at one site may do poorly in another. Having different cultivars available gives growers the opportunity to try them all, then select the one best suited for their own growing conditions."

CalWhite Excels in California Potato Fields

Besides superb new reds and russets, the Aberdeen scientists also breed potatoes called long whites. Oval, with smooth, white-to-buff skin and white flesh, these are ideal for roasting, steaming, or boiling.

The research team credits Ronald E. Voss of the University of California at Davis for much of the work that went into testing CalWhite, a long white that is proving well suited to that state's famed Central Valley farmlands. "This potato," says Voss, "surprised everyone by its California yields. In our tests, CalWhite set a record for production of U.S. No. 1 potatoes."

SCOTT BAUER (K9150-1)

If breeding is successful, a pollinated potato flower will develop into a tomatolike fruit containing seeds like these.

SCOTT BAUER (K9148-1)

Disease resistance is important in potato selection. These potatoes were inoculated with the fungus that causes the storage disease known as dry rot. Plant pathologist Dennis Corsini and scientific aide Penny Tubbs examine the tubers for disease symptoms. Inset: Closeup of inoculation points on a potato.

SCOTT BAUER (K9150-2)

Originally regarded primarily as a fresh-market spud, CalWhite may find yet another use. Right now, growers and processors in Washington, Oregon, and Idaho are scrutinizing CalWhite's performance for processing into dehydrated flakes or french fries. CalWhite's early maturity would fill an important niche for french fry processors by providing tubers for processing plants just before the previous season's stored potatoes are used up. And CalWhite would be available nearly 2 months ahead of Russet Burbank and other later-maturing potatoes.

Growers can buy seed potatoes of IdaRose, Gem Russet, Bannock Russet, and CalWhite through about 35 commercial seed producers in the western United States. Potato breeders and researchers who want to test the new potatoes can get small quantities from Corsini or Novy, or from collaborator Stephen L. Love at the University of Idaho at Aberdeen.—By **Marcia Wood,** ARS.

This research is part of Plant Diseases (#303) and Plant, Microbial, and Insect Genetic Resources, Genomics, and Genetic Improvement (#301), two ARS National Programs described on the World Wide Web at http://nps.ars.usda.gov.

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